HORIZON
WELL LOGGING

COMPANY:	NAHAMA & WEAGANT ENERGY CO.
WELL:	"CONDOR" L.F. #43-32-65
LOCATION:	2367'N and 1090'W from the SE corner of Section 31, T6N, R3W, W.M.
ELEVATION:	791' G.L. 801' K.B.
FIELD:	MIST
COUNTY:	Columbia, Oregon
API NUMBER:	36-009-00000
SPUD DATE:	8-24-93
LOGGING DATES:	8-24-93 to 8-29-93
LOGGING DEPTHS:	40' to 1909'
GEOLOGIST:	Jeff Vaughan
COMPANY MAN:	Rob Lucas
CONTRACTOR:	Taylor Drilling Inc
RIG	7
LOGGING GEOLOGISTS:	Dan Cross Jim Kastes
BIT SIZE:	14.75" to 503' 9.875" to 1909'
CASING:	10.75" to 502'

CALIBRATION: 2% METHANE = 100 UNITS

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After Trip
After Survey
tion Gas
Cut gas
Gas
as
Gas
Run

e Full scale)

SYMBOLS

PEBBLES >2mm
SAND
SANDSTONE
SILTSTONE
MUDSTONE
SHALE
MARL
CLAY
CHERT
DOLOSTONE
LIMESTONE
VOLCANICS
TUFF
BASALT

GASES

DITCH GAS
OFFSCALE
CUTTINGS GAS
OFFSCALE

CHROMATOGRAPH

METHANE
ETHANE
PROPANE
BUTANE
PENTANE

REMARKS

DESCRIPTIONS
SURVEYS
MUD CHECKS
MISCELLANEOUS

LITHOLOGY | MINERAL | GASES | CHROMATOGRAPH | REMARKS

MINERAL COLUMN

(HIGHLIGHTS).

SAGER CREEK

Note: Drill mud flowing on ground thru hollow pipe from under(?) conductor pipe. drill ahead; fracture/leak eventually heals itself.

MW 8.8
VIS 42

Clay: pl gry brn; fmly dk; plastic consistency; v com nodular ctgs; v pr solubility; mod adhesion; v sandy - sand lams & "floating" sand grains; com v fn carb mat; loc v com mica, pred Musco.

Mudstone: pl gry-brn to med yel-brn; prly ind, sectile to crumbly; hydrates to fine, malleable, plastic nods; earthy Latr; silty/sandy w/ com mica; fmly dissm carb mat; v sme vis bed lin.

Sand: lt gry, cloudy; v fnU to fnU; ang to sbrnd to sbrdd; v l srtd; loose - frsl; arkos , pred Fspr & Qtz; as component of a lbm interbed in pl yel-brn Mdst; assoc w/marl; Mdst @ 145° bcng v ind, calc cmtd SS @ 147'

Clay: pl to med gry-brn; thick rasty consistency w/com firm, nodular ctgs; prly solubly; gd adhesion; smooth greasy Tex; silty/sandy, derived f/hydrated Mdst as abv, persistent to med - dk yel-or marl/ tffcs marl; dk dissolves in HCl.

Siltstone/Mdst: pl to med yel-brn, grysh brn; mod ind, sli frl; pred rndd ctgs w/tr bed lin; rmgs gritty Tex; arenaceous; com v fn dk brn carb mat; v com Musco, tr Biot; tr formns & brkn shell debris; cont'd gt tr yel-or marl.

Sand: lt gry, clr, cldy; v fnU to fnU; shang; wl srtd; pred loose, occ as fit, silty ss lams in Mdst; arkos w/minor accessory inclus.

Mudstone: pl to med yel-brn ,m fresh surfs; pr to med ind, pred frm, pasty to sli frl; earthy Latr; v rough gritty Tex; arenaceous w com thin sand lams; v com Musco, spty Biot; variable amts carb debris; loc abd marl frgs(.5 - 2mm).

Clay: pl gry-brn; thick, gummy; pr solu; plastic; gd adhesion; sandy.

Mudstone: med to occ dk yel-brn; pr to modly ind, sli sectile to crumbly; cont'd rndd, blky ctgs w/ earthy Latr; fn grainy Tex, loc gritty; arenaceous w/com fn sd inclusions & thin lenses/lams; com v fn carb mat; v com Musco; cont'd strong tr marl(tffcs?).

Marl: pl to dk yel-or; gen wl ind, sli brtl to tough; matte to infrcq shrns Latr; pred rough, abrasive Tex; slov rx to HCl, leaving 30-40% insolu core; occ dk or "flecks" poss org debris.

Mudstone: med to dk yel-brn; sft, friable; earthy Latr w/micaceous sparkle on freshly brkn surfs; subtle incr fn dissem carb mat - ctgs bcmg dkr; v com Musco, occ Biot; loc v com or marl(tffcs?).

Clay: med grysh brn; sft; mod thick pasty consistency w/com firm, gr/waxy - Texrd nods; pr solu; gd plasticity & adhesion; silty/sandy w/com loose micas, fn carb debris.

Mudstone: med yel-brn, loc grysh brn prly ind, crumbly, frl; rndd ctgs w/earthy Latr; v micaceous - sparkles on freshly brkn surfs; fn gritty Tex; silty, loc arenaceous w/ "floating" fn sd & thin ss lams; cont'd org rich w/com blk carb debris; loc v com or marly frags.

Siltstone: pred med grysh brn, mottled w/yel-brn; prly ind, crumbly, frl; gritty Tex; com sandy; variably calc; exhbts fnt bed lin; micaceous & org rich - sim to Mdst, but coarser; sptty Texrd, infreq brkn shell debris.

Sand: lt gry, cloudy; v fnU to fnU; ang to sbrnd; lo spher; wl srtd; pred as component of sandy siltst but loc apprs as thin lams/interbds; arkosic w/sil to accessory mnrls; rr tr fldsr stn.

Clay: pl to med grysh brn, apprs yel brn when wshd; v sft; thick gummy consist w/greasy Tex; prly solu; hi plasticity; (home incr gummy w/addition of Benex to mud); sandy/silty w/persistent tr yel-or marl(tffcs?).

Mudstone: med to loc dk yel-brn; pred frm, plastic nodules to Benex?), crumbly inside nods; dl earthy Latr; fn gritty Tex, v silty decr sand; v micaceous; apprs org rich, apprs dkr brn w/depth.

Clay: med yel-brn; thick gummy consistency w/com frm, plastic nodules; pr solu; gd adhesion; slick, greasy Tex; silty/sandy; rr loose brkn shell debris; nonapparent.

Siltstone: dk yel-brn, grysh brn on wshd surfs; prly ind, sli sectile to frl; dl latr w/micaceous sparkle on fresh surfs; occ wxy when scored; fn gritty Tex, sandy in part w/thin sd lams; wkly calc; com dk brn org debris.

Sand: lt gry, cloudy; v fnL to fnU; ang - sbrnd; lo spher; wl srtd; arkos w/spty accessory mnrls, poss rr volc clasts; as thin lams in aceneous Siltst/Mdst.

Mudstone: med grysh brn, yel brn on freshly brkn surfs; prly ind, pasty frl; earthy to sl wkxy Latr; fn grainy Tex, silty, com sandy; variable amts dk brn carb debris - com highlights thin bdding; sli calc w/ occ marly lams; cont'd micaceous.

Siltstone: incr dk grysh brn, occ yel-brn; mod ind, crumbly, sli frl; dl latr w/strong micaceous sparkle; rough gritty Tex; variably sandy; v com fnly dissem carb mat(v fnL - medL debris); loc marly lams; tr incipient fiss along micaceous lams.

Clay: med grysh brn; v sft; mod thick pasty consist w/com firm greasy nods; pr solu; hi plasticity; gd adhesion; loc fmel v slick when influenced by Benex thru flowline; com to v wkly expansive; silty.

Siltstone: med to v dk grysh brn, med yel-brn; pr to mod ind; crumbly, frl; earthy Latr(more clay rich ctgs exhbt wxy Latr); fn gritty Tex, sli arenaceous; v com fn carb debris; pr pl yel-or marl.

Mudstone: dk yel-brn, lse pl grysh brn; prly ind, sectile to sli crumbly; wkly sol felt sponge; sli wxy Latr w/fn grainy Tex; sli calc; com fn carb mat; brkn shell debris; abd carb mat @ 1075-1080'

Mudstone: olv gry-grn, loc yelsh hues; med to mod wl ind; sli brtl to loc tough; tab w/distinct wxy sheen; dl, sli resinous Latr, waxy when scored; v fn grainy Tex; sli trnsl quality on thin edges; ctgs w/yelsh hue appr tffcs in part; tr mica, pl grn volc inclu; loc uneven partg (sometimes flss); variably calc; tr pl gry-or tuff lams; bulk spls fairly homogeneous.

Mudstone: med to dk olv gry grn w/ loc streaks med gry; mod - mod wl ind; prod med brtl to loc tough; blky to tab ctgs w/dl waxy Latr; v fn grainy Tex; sli trnsl on thin edges; variably silty, loc tffcs; tr fn ss w/volc clasts; tr gry wxy ash @ 1190'; spty grn & occ or volc debris; tr fldsr, rr frag.

Tuff: pl gry; wl ind; tough; tab - ctgs w/sharp edges; matte Latr - dl waxy Latr when scored; wk trnsl quality; wkly calc; spty.

Mudstone: dk olv gry-grn; mod wl ind, brtl, occ tough; dl, sli waxy to occ shrns Latr - trnsl quality; tffcs in part; sli - mod calc; loc com v fn pl grn, bluish & or volc inclusions; occ appr shaly.

Clay: olv gry-grn; relatively thin pasty consistency; easily solu; lo adhesion; lo plasticity.

Mudstone: olv gry grn, occ yelsh hued; v firm, brtl to occ tough; fl to occ shrns Latr(waxy scored) fn grainy Tex loc bcmg more gritty w/incr siltfrr sand; gd to thin tffcs lams; incr v fn grn & or volc debris.

Siltstone: med olv gry-grn bcmg pred med olv gry; pr to mod ind, fri, crumbly; dl earthy Latr(dcr waxy) fnly abrasive Tex; tffcs in part; w/com dk grn & occ or volc clasts; incr amts v fnL sand grdg to SS; pl olv gry tffcs, calc as @ 1390'

Tuff: pl olv gry, pl gry; firm, brtl wax-like ctgs w/sil trnsl quality; apprs to be devitrified ash, com mixed w/fn sand & silt; tr pure ctgs.

Siltstone: med to occ lt olv gry; pr to modly ind, crumbly to sli brtl;variates f/arenaceous to to brtl waxy ctgs; rough gritty Tex overall w/v com v fn volc debris, spty mica forams and brkn shell frags; loc tffcs w/occ thin ash lams; tr frambld pyr.

Sandstone: lt olv gry; v fnL to fnU ang to sbang; wl srtd; fri; arkos w/com dk grn & or volc clasts; pred silty grdg f/arenos Siltst as abv; gd tr .3mm ambrl Pyr, Musco & brkn shell frags.

Siltstone: lt to med olv gry; fn to sli brtl w/waxy Mtrx; rough Tex; sandy grdg to SS; com but decr volc debris; gd tr Pyr, com forams.

Sand/SS: lt olv gry, v fnL to loc medU; pred fnL - fnU; ang to sbrnd; lo spher; wel srtd; fri; com silty grdg to sandy Siltst; arkos w/com Fspr; spty blk, gry, grn, clrs, & or volc lith clasts; bulk spls mod calc; com forams.

Clay: lt olv gry, bcmg dkr @ 1590'; v sft; mod thick pasty consist; easily solu; mod plasticity; gd adhesion; v silty/sandy; sli expansive.

Siltstone: med olv gry; sli brtl (waxy Mtrx f/clasty); rough gritty Tex; intrbd w fn -med sand w/com mica, spty Pyr, scat volc.

Sand: lt olv gry, cloudy; v fnU to fnU; shang; lo spher; mod wl srtd; fri; where incr in silty Mtrx; blky calc; arkos w/spty gry, grn, or & occ volc lithics; com mica, pred Musco; prsnt tr pl yel tuff(?) frags; spty foram, Pyr.

Mudstone: fim, dk gry brn Mdst w/ sil wxy Latr f/(16?); pl gry-brn sectile, pasty Mdst/Clyst f/1?1' - prly ind, v fn grainy Tex, dissd decr fn sand & volc debris; spty pl brn to or-brn mat, com organic Mdst/Clyst most prob Cowlitz.

Siltstone: pl gry-brn, pl olv gry; pr to mod ind, sectile to v sli brtl; wxy Latr w/dist trnsl quality; smooth greasy Tex; v fn, v fnl bed lin defined by v fn brn org mat; mod calc; spty ambrl Pyr.

Clay: med to dk olv gry, brnsh gry; v sft; pasty consist w/lo to mod plasticity; mod solu; sli expansive silty in part.

Claystone: med gry-brn, bcmg dkr; sectile, v smooth greasy Tex.

Sand/SS: lt gry w/sil grysh hue; fnL to occ coarsU, pred fn to med; ang to sbrnd; mod spher; mod srtd; pred loose sand w/occ sdst & com grn pelletoid clasts, occ volc clst (sand ambrl) Pyr nods; gd appr pore; tr Biot & epidote.

Sand/SS: lt gry, loc sli grysh hue; fnL to medU; shang to sbrnd; mod wl srtd; fri to loc mod wl ind; calc; grain prsnt vrgl appr pore; arkos w/com micas & loc abd .1 - 1.0mm ambrl/ambr Pyr; spty epid; sli tr kaolin alts in Fspr.

Depth	Lithology	Mineral	Gases	Chromatograph	Remarks
0					
100					
200					
300					
400					
500					
600					
700					
800					
900					
1000					
1100					
1200					
1300					
1400					
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1700					
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1900					